

AWIPS INFORMATION NOTE 9 (for Electronics Systems Analysts)

Engineering Division: W/OPS13: GLD/FJZ

SUBJECT : Advanced Weather Information Processing System (AWIPS) Satellite Broadcast Network (SBN) Antenna Ice and Snow Removal Procedure

PURPOSE : To provide the proper ice and snow removal procedure for the AWIPS SBN antenna dishes.

BACKGROUND: National Weather Service field sites have reported cases of AWIPS SBN antenna dish heaters failing to keep ice and snow from accumulating on the dishes. Most of the Andrew and Prodelin antenna heaters appear to be working. The Comtech antenna heaters, however, have not been as effective in completely eliminating the accumulation of ice and snow and have, at certain sites, been directly attributed to lost AWIPS products.



Until further analysis proves otherwise, the visible accumulation of ice and snow and/or low E_b/N_0 readings do not necessarily attribute to lost AWIPS products.

PROCEDURE

Since the overall responsibility of the SBN antenna lies with GTE, the following procedure should only serve to ensure proper operational status of the antenna system. **At no time should the site perform maintenance on the antenna deicing system and its associated equipment.** If it becomes necessary to clear accumulated ice and snow from the dish surface, the following guidelines must be carried out (Reference System Manager Manual, Release 4.0, Chapter 18, under the heading "Daily Actions"):

A. SBN Antenna Deicer Status Check

1. Ensure that the antenna deicing system switches described below are in their normal operating position.
 - Circuit breaker inside the WFO = **ON**
 - Cut-off switch at base of antenna pedestal = **ON**
 - Rain/Snow Sensor Control Switch = **AUTO**
2. The antenna deicer unit will not activate during the following instances:
 - When the temperature is below 15F.
 - When moisture is not detected by the PS2 sensor moisture grid.
3. If all or one of the characteristics are met in step 2, place the PS2 sensor to the manual or up position. This will activate the deicer unit.
4. After the antenna dish is clear of ice and snow, place the switch in the down or "Reset" position and return it back to the middle or "Auto" position.
5. If the AWIPS is still losing products, the site should call the Network Control Facility (NCF)

- at 301-713-1288, to verify the site's E_b/N_o readings are within acceptable limits.
6. If the NCF verifies the site's E_b/N_o readings are not within tolerance, further action may require snow and ice removal from the antenna dish surface.
 7. To verify the current E_b/N_o readings (8 db is typical), log in to a Telnet window and log on to **as1** as **awipsusr**. Continue by typing the following commands:
 - **cd awips/ops/logs**
 - **tail mc_log_modem.demod1** (to monitor the gateway data signal) *or*
 - **tail mc_log_modem.demod2** (to monitor the satellite data signal)
 8. To monitor the demod logs over time (logs are updated every 30 minutes), type the following commands
 9. **cd awips/ops/logs**
 10. **tail -f mc_log_modem.demod1** (to monitor the gateway data signal) *or*
 11. **tail -f mc_log_modem.demod2** (to monitor the satellite data signal)

Whenever performing maintenance on any part of the AWIPS SBN antenna, remove power to the antenna heaters via the antenna cut-off switch which is located at the base of the antenna.



Care should be exercised when removing accumulated ice. Ice formed at the lower edge of the antenna dish may break off and cause personnel injury.

B. Ice and Snow Removal Procedure

- Do not use shovels, ice picks or other sharp instruments when removing accumulated ice and snow from the antenna dish.
 - Do not touch or jar the feedhorn strut assembly.
 - Do not clear snow from or touch the feedhorn/LNB assembly.
 - Do not get into or stand on the antenna dish.
 - Do not use any type of liquid deicer near the antenna deicer system.
1. Using a soft bristled brush/broom, gently sweep any accumulated snow from the dish. **Do not attempt to chip accumulated ice from the dish.**
 2. If the snow and ice cannot be removed from the dish via a brush/broom, and the site is still experiencing a loss of data, call the NCF.
 3. Return power to the deicer unit via the cut-off switch at the base of the antenna.
 4. At a workstation, verify the signal strength has not decreased to a value below 5 dB. To confirm, type the commands described in part A, steps 7 and 8.
 5. If the signal strength is below 5 dB, and the site has not been notified by the NCF, contact the NCF for further assistance.

TECHNICAL ASSISTANCE

Please refer any technical questions regarding this note to
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